

Application No. 10/087,718
Amendment "E" dated April 5, 2005
Reply to Office Action mailed February 15, 2005

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An article of manufacture comprising a biodegradable sheet or film having a single layer formed by extruding, blowing or casting a thermoplastic melt formed from a biodegradable thermoplastic composition that includes:

(i) at least one stiff thermoplastic biodegradable polymer having a glass transition temperature greater than about 10°C;

(ii) at least one soft thermoplastic biodegradable polymer having a glass transition temperature less than about 0°C; and

(iii) at least one type of filler particles,

wherein the sheet or film is stretched during processing so as to result in cavitation comprising tiny cavities in the vicinity of the filler particles.

2. (Original) An article of manufacture as defined in claim 1, wherein the filler particles comprise at least one of inorganic filler particles and organic filler particles.

3. (Original) An article of manufacture as defined in claim 1, wherein the inorganic filler particles have a concentration greater than about 10% by weight of the biodegradable thermoplastic composition.

4. (Original) An article of manufacture as defined in claim 1, wherein the inorganic filler particles have a concentration greater than about 20% by weight of the biodegradable thermoplastic composition.

5. (Original) An article of manufacture as defined in claim 1, wherein the inorganic filler particles have a concentration greater than about 30% by weight of the biodegradable thermoplastic composition.

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6. (Original) An article of manufacture as defined in claim 1, wherein the sheet or film has dead-fold of at least about 50%.

7. (Original) An article of manufacture as defined in claim 1, wherein the sheet or film has dead-fold of at least about 70%.

8. (Original) An article of manufacture as defined in claim 1, wherein the sheet or film has dead-fold of at least about 80%.

9. (Original) An article of manufacture as defined in claim 1, wherein the sheet or film has a measured thickness in a range of about 0.0003" to about 0.01".

10. (Original) An article of manufacture as defined in claim 1, wherein the sheet or film has a measured thickness in a range of about 0.0005" to about 0.003".

11. (Original) An article of manufacture as defined in claim 1, wherein the sheet or film has a measured thickness in a range of about 0.001" to about 0.002".

12. (Original) An article of manufacture as defined in claim 1, wherein the sheet or film has a moisture vapor transmission rate of at least about 80 g/m²/day.

13. (Currently Amended) An article of manufacture as defined in claim 1, wherein the biodegradable thermoplastic composition ~~includes at least one stiff thermoplastic biodegradable polymer and at least one soft thermoplastic biodegradable polymer, and optionally~~ further comprises at least one of a nonbiodegradable polymer or fibers.

14. (Previously Presented) An article of manufacture as defined in claim 13, wherein at least a portion of the soft thermoplastic biodegradable polymer comprises thermoplastic starch that is free of plasticizers.

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15. (Original) An article of manufacture as defined in claim 1, wherein the sheet or film comprises a food wrap.

16. (Previously Presented) A sheet or film formed by extruding, blowing or casting a thermoplastic melt formed from a biodegradable thermoplastic composition that comprises at least one hydrophobic thermoplastic biodegradable polymer, wherein the sheet or film is textured by a knurled or embossing-type roller so as to have dead-fold of at least about 70%.

17. (Previously Presented) A sheet or film as defined in claim 16, wherein the textured sheet or film has dead-fold of at least about 80%.

18. (Currently Amended) A sheet or film formed as a single layer by extruding, blowing or casting a thermoplastic melt formed from a biodegradable thermoplastic composition that comprises at least one ~~hydrophobic~~ stiff thermoplastic biodegradable polymer and at least one type of filler particles included in an amount so that the sheet or film has dead-fold of at least about 70%, wherein the sheet or film is water-resistant and biodegradable.

19. (Previously Presented) A sheet or film as defined in claim 18, wherein the sheet or film has dead-fold of at least about 80%.

20. (Previously Presented) A sheet or film as defined in claim 18, wherein the sheet or film has dead-fold of about 100%.

21. (Previously Presented) A sheet or film as defined in claim 18, wherein the filler particles are included in an amount greater than about 10% by weight of the biodegradable thermoplastic composition.

22. (Previously Presented) A sheet or film as defined in claim 18, wherein the filler particles are included in an amount greater than about 20% by weight of the biodegradable thermoplastic composition.

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23. (Previously Presented) A sheet or film as defined in claim 18, wherein the filler particles are included in an amount greater than about 30% by weight of the biodegradable thermoplastic composition.

24. (Previously Presented) An article of manufacture as defined in claim 1, wherein at least a portion of the filler particles protrude from a surface of the sheet or film.

25. (Previously Presented) An article of manufacture as defined in claim 24, wherein the particles that protrude from the surface of the sheet or film have particle size diameters that are greater than the thickness of the sheet or film.

26. (Currently Amended) An article of manufacture as defined in claim ~~13~~ 1, wherein the stiff thermoplastic biodegradable polymer comprises at least one stiff synthetic biodegradable polymer and wherein the soft thermoplastic biodegradable polymer comprises at least one soft synthetic biodegradable ~~synthetic~~ polymer.

27. (Previously Presented) An article of manufacture as defined in claim 1, wherein the sheet or film is laminated after being formed to a separately-formed substrate.

28. (Previously Presented) An article of manufacture as defined in claim 27, wherein the substrate comprises a fibrous sheet or molded container.

29. (Previously Presented) A sheet or film as defined in claim 16, wherein the biodegradable thermoplastic composition comprises at least one stiff thermoplastic biodegradable polymer and at least one soft synthetic thermoplastic biodegradable polymer.

30. (Previously Presented) A sheet or film as defined in claim 18, wherein the biodegradable thermoplastic composition comprises at least one stiff synthetic hydrophobic thermoplastic biodegradable polymer and at least one soft synthetic thermoplastic biodegradable polymer.

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31. (Previously Presented) A sheet or film as defined in claim 18, wherein at least a portion of the filler particles protrude from a surface of the sheet or film.

32. (Currently Amended) An article of manufacture comprising a single layer biodegradable sheet or film formed by extruding, blowing or casting a biodegradable thermoplastic composition that comprises at least one thermoplastic biodegradable polymer and at least one type of filler particles, wherein at least a portion of the filler particles protrude from a surface of the sheet or film.

33. (Previously Presented) An article of manufacture as defined in claim 32, wherein the filler particles comprise at least one type of inorganic filler particles, and wherein the sheet or film is stretched during processing so as to result in cavitation comprising tiny cavities in the vicinity of the filler particles.

34. (Previously Presented) An article of manufacture as defined in claim 32, wherein at least a portion of the filler particles have particle size diameters that exceed the thickness of the sheet or film.

35. (Previously Presented) An article of manufacture as defined in claim 32, wherein at least a portion of the thermoplastic biodegradable polymer comprises at least one stiff synthetic thermoplastic biodegradable polymer and at least one soft synthetic thermoplastic biodegradable polymer.

36. (Cancelled)

37. (Cancelled)

38. (Cancelled)

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39. (New) An article of manufacture comprising a single layer film or sheet formed by extrusion, blowing or casting a thermoplastic melt formed from a biodegradable thermoplastic composition comprising:

at least one stiff thermoplastic biodegradable polymer having a glass transition temperature greater than about 10°C; and

at least one soft thermoplastic biodegradable polymer having a glass transition temperature less than about 0°C,

at least a portion of the soft thermoplastic biodegradable polymer comprising an aliphatic-aromatic copolyester,

the biodegradable thermoplastic including starch that is free of plasticizers and that retains a substantial portion of its crystallinity in order for the starch to (i) act as a filler within the film or sheet and/or (ii) act as a stiff thermoplastic polymer within the film or sheet and/or (iii) impart dead-fold to the film or sheet.

40. (New) An article of manufacture as defined in claim 39, wherein the film or sheet has dead-fold of at least about 70%.

41. (New) An article of manufacture as defined in claim 39, wherein the film or sheet has dead-fold of at least about 80%.